

Appl. No.: 10/632,980
Amdt. Dated: 13 January 2007
Reply to Office Action dated 09/13/2006

Amendments to the Claims:

Please amend the following claims as indicated. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) A brake pad assembly for a bicycle for urging a brake shoe against the rim of the bicycle, the combination comprising:

an elongate support member;

longitudinally extending brake pad holder affixed to said support member, said brake pad holder having multiple unitary brake pads in sequential abutting relationship with selected ones of said brake pads composed of different braking compounds for imparting a different braking characteristics to that said brake pad;

said brake pad holder having a truncated end for slidably receiving said multiple brake pads in said brake pad holder;

said brake pad holder including inwardly projecting shoulder means to define a continuous planar flanged surface that defines a perimeter recess for receiving said brake pads;

said brake pad holder and said brake pads configured for interchangeability of said brake pads within said brake pad holder;

~~closure means for complementary mating with said truncated end for securing said brake pads within said brake pad holder, said closure means including shoulder means and a recess complementary with the shoulder means and recess of said brake pad holder for receiving a portion of the last inserted brake pad to provide flanged surface providing said brake pad holder with a continuous flanged recess for securing retaining said brake pads within the mated combination of said brake pad holder and said closure means, after insertion in said brake pad holder.~~

2. (currently amended) The brake pad assembly according to Claim 1 wherein said closure means comprises an end cap that slides over a reduced portion of said truncated end to mate ~~mates~~ respective shoulders and recesses ~~flanged surfaces~~ of said end cap and said brake pad

holder to provide said continuous perimeter recess, said closure means further having locking means providing for secure engagement of said cap with said truncated end.

3. (previously presented) The brake pad assembly according to Claim 2 wherein the end portion of said truncated end has inwardly reduced outsides with terminal ends of said shoulder means of said truncated end having step cuts, said end cap having cut outs in said complementary shoulder means whereby said end cap is slid along said reduced sides to mate said step cuts and said cut outs to thereby merge flush and even with said truncated end. ~~Claim 1 herein said brake pad holder has a longitudinal transverse curvature substantially in conformance with the radius of curvature of the bicycle wheel rim and said brake pads are longitudinally aligned relative to one another and relative to said brake pad holder.~~

4. (currently amended) The brake pad assembly according to Claim 2 ~~Claim 3~~ wherein each of said brake pads is comprised of first and second portions separated by indentations in an indentation encompassing said brake pad, said first portion captively mounted in said brake pad holder by means of said continuous shoulder means flanged surface and said second portion extending from said brake pad holder and having a braking surface for contact with said bicycle wheel rim.

5. (currently amended) The brake pad assembly according to Claim 4 wherein said first top portion and said indentations are indentation is comprised of a strengthening compound for imparting strength and resilience to said brake pad preventing operational pull out of said brake pads from said brake pad holder and said second portion is comprised of a compound for imparting a particular braking characteristic to said brake pad.

6. (currently amended) The brake pad assembly according to Claim 4 wherein said shoulder means flanged surface of said truncated brake pad holder provides continuous longitudinally extending capture means for interaction with said indentations in said brake pads to slidably receive said first portion of each said brake pad, said locking means including recess means in at least one of said brake pads and a locking pin, said shoulders, said recess, said end cap and said locking pin configured for mating coacting engagement to fixedly lock said individual brake pads within said brake pad holder.

7. (canceled)

8. (currently amended) The brake pad assembly according to Claim 1 wherein said closure means includes in combination

indentations in said brake pads for slidably mating with said shoulder means in said brake pad holder; flanged surface to slidably receive said brake pads along said flanged surface;

an end cap having complementary shoulder means mating with said truncated end; and an associated locking pin cooperatively received by said end cap and said truncated end whereby said brake pads are captured within the mated combination of said end cap and said brake pad holder.

9. (currently amended) A brake pad assembly for a bicycle for urging a brake shoe against the rim of the bicycle wheel, the combination comprising:

longitudinal extending brake pad shoe having a continuous planar flanged surface defining an undercut groove for receiving a plurality of brake pads positioned in sequential abutting arrangement therein, said brake pads configured for interchangeability within said brake shoe and selected ones of said brake pads composed of a different braking compound for imparting a different braking characteristic to said brake pad assembly;

said brake pad shoe having a truncated open end and recessed means for receiving said brake pads;

complementary end cap means having recessed means complementary with said brake pad shoe recessed means configured for mating to said truncated end to provide a continuous recess around the the combination of said brake shoe and said end cap means to thereby secure said pads in abutting relationship within said brake shoe;

said brake pads having an overlapping end and an under-lapping end with adjacent pads mating with said overlapping end over said under-lapping end; and

said overlapping end bearing down on said under-lapping end of an adjacent pad in response to wheel rim movement pressure to thereby prevent pull out of said pads from said brake shoe; and said end cap configured with a complementary flanged surface to provide a continuous planar flanged recess completely around the perimeter of the combination of said brake shoe and said end cap for receiving and securing said brake pads; and

a locking device cooperatively received by said end cap and said truncated brake shoe end whereby said end cap is securely engaged with said truncated brake shoe.

10. (currently amended) The brake pad assembly according to Claim 9, said locking means comprising:

a recess in at least one of said brake pads; and

a locking pin, cooperatively received by said end cap, said truncated end and said recess whereby said brake pads are secured within said brake pad shoe. Wherein said brake pads have an overlapping end and an underlapping end with adjacent pads mating with said overlapping end over said underlapping end; and

said overlapping end bearing down on said underlapping end of an adjacent pad in response to wheel rim movement pressure to thereby prevent pull out of said pads from said brake shoe.

11. (currently amended) The brake pad assembly according to Claim 10 wherein said continuous flanged recess, said complementary end cap, the mating of the ends of said brake pads, and said locking device cooperating to prevent pull out of said brake pads from said brake shoe.

12. (previously presented) The brake pad assembly according to Claim 9 wherein each of said plurality of brake pads is comprised of a top portion and a bottom portion, the portions defined by undercut indentations in said brake pads, and said brake shoe includes inwardly projecting shoulder means for mating with said indentations, said brake pads slidably received along said shoulder means with said bottom portion extending from said brake shoe and having a braking surface for contact with said bicycle wheel rim.

13. (previously presented) The brake pad assembly according to Claim 12 wherein said top portion and the associated undercut indentation is formed of a compound to provide resistance to brake pad pull out due to wheel rim moving forces and said second pad portion is formed of a compound to provide a desired breaking characteristic.

14. (previously presented) The brake pad assembly according to Claim 9 Claim 10 wherein said brake pad holder has a longitudinal curvature substantially in conformance with the radius of curvature of the bicycle wheel rim and said brake pads are longitudinally aligned relative to one another and relative to said brake pad holder. wherein the top surface of the outer shell of said brake shoe includes exposed corrugated indentations for increased rigidity and strength.

15. (currently amended) A brake shoe assembly for a bicycle urging a brake shoe against the rim of the bicycle wheel, the assembly comprising:

an elongate longitudinally extending brake shoe having a truncated end for receiving a plurality of unitary brake pads in abutting arrangement sequentially positioned within said brake shoe, each having a rim engaging braking surface generally coplanar with the other and composed of pre-selected braking compounds for imparting a variety of braking characteristics to said brake pad assembly, said brake shoe and said brake pads configured for slidable interchangeability of said brake pads within said brake shoe;

each of said brake pads comprised of a top portion and a bottom portion defined by an indentation undercut from said top portion and encompassing each brake pad on at least both sides thereof, said brake shoe including inwardly projecting shoulders configured for mating with said indentation whereby said brake pads are slidably received along said shoulders, said bottom portion extending from said brake pad holder and having a braking surface for contact with said bicycle wheel rim; and

~~complementary end cap closure means configured for complementary mating with to said truncated end to thereby secure said pads in abutting relationship within said brake shoe aligned to each other and to said brake shoe, said end cap having inwardly projecting shoulders complementary with the inwardly projecting shoulders of said brake shoe, said closure means configured with a complementary flanged surface to provide a continuous planar flanged recess completely around the perimeter of the combination of said brake shoe and said end cap closure means for receiving and securing said brake pads.~~

16. (previously presented) The brake pad assembly according to Claim 15 wherein said brake pads have an overlapping end and an under-lapping end with adjacent pads mated with said overlapping end over said under-lapping end, and said overlapping end bears down on said under-lapping end of the adjacent pads preventing pull out of said pads from wheel rim movement pressure.

17. (currently amended) The brake pad assembly according to Claim 15 further including locking means comprising a recess in at least one of said brake pads, said end cap closure means and a locking pin, said recess, said truncated end and said end cap closure means configured for receiving said locking pin to fixedly position, capture and retain said brake pads within said brake shoe. Claim 16 wherein said closure means is configured as an end cap and includes

~~locking means for fixedly mating said end cap to said truncated end for positioning and capturing said brake pads within said brake pad holder.~~

18. (currently amended) The brake pad assembly according to Claim 15 ~~Claim 17~~ wherein said brake shoe has longitudinal ~~transverse~~ curvature substantially in conformance with the radius of the bicycle wheel rim and said truncated end is formed with the terminal outsides thereof recessed inwardly and with the terminal ends of said shoulders having step cuts, the shoulders of said end cap having cut outs whereby said end cap is slid along said recessed outsides and over said step cuts to mate flush and even with said truncated end. ~~each of said brake pads has a rim engaging surface generally coplanar with the each other.~~

19. (currently amended) A method for selectively changing braking characteristics of a brake pad assembly for a bicycle comprising:

providing a longitudinal extending brake shoe having a ~~continuous planar flanged recess for receiving brake pads and a~~ truncated end;

providing multiple ~~unitary~~ brake pads ~~in sequential abutting relationship in said brake shoe with selected ones of said brake pads composed of different braking compounds for imparting a different braking characteristic to said brake pad assembly;~~

slidably inserting said selected brake pads in said brake pad shoe in sequential abutting relationship through said truncated end;

slidably interchanging said brake pads ~~as desired to provide effect~~ different braking characteristics to said brake pad assembly; and

providing ~~end cap~~ closure means for complementary mating with to said truncated end for securing said brake pads within said brake shoe assembly, said closure means and said brake shoe end cap configured with complementary recesses a complementary flanged surface to provide a continuous ~~planar flanged~~ recess completely around the ~~perimeter of the mated~~ combination of said brake shoe and said closure means end cap for receiving and securing said brake pads.

20. (currently amended) The method of claim 19 wherein at least one of said brake pads has a top portion configured for reception and captured in said recesses and formed of a compound to provide resistance to brake pad pull out due to bicycle wheel rim moving forces and a bottom portion configured to extending from said recesses and formed of a compound to provide a desired braking surface for contact with said bicycle wheel rim, characteristic.